

- FLORA TELLURIANA. Part I. 1837 (first quarter).
 II. 1837 (first quarter).
 III. 1837 (November or December).
 IV. 1838 (near middle of year).
 NEW YORK BOTANICAL GARDEN.

DESCRIPTION OF A NEW TERTIARY FOSSIL FLOWER FROM FLORISSANT, COLORADO

BY ARTHUR HOLLICK

Among the many interesting specimens discovered by Professor Theo. D. A. Cockerell in the Tertiary plant beds at Florissant, Colorado, recently transmitted to me for critical examination, is one which represents a more or less well-preserved flower. Some of its parts are obscure or missing, but those that are preserved show the general characters of the filaments, anthers, and petals, and, to a lesser extent, those of the calyx also.



FIG. 1. Photograph of *Phenanthera petalifera*, $1\frac{1}{2}$ times natural size.

It is so seldom that the delicate tissues of petals, filaments and anthers are preserved as fossils, and the known examples of any such are so few, that this specimen is of unusual interest and is worthy of description even though the description must necessarily be incomplete.

Phenanthera petalifera gen. et sp. nov.

Remains consisting of more or less dismembered parts of a small pedunculate, choripetalous flower, which may be allied either to the family Caryophyllaceae or to the order Rosales or to the Myrtales.

Calyx-tube about 4 mm. wide and 5 mm. long, urn-shaped, 4 (?) -divided above the middle, the divisions bearing spatulate appendages (?). Petals spatulate, 2-3 times longer than the divisions of the calyx-tube and alternate with them. Stamens 8,

exserted beyond the calyx, about one-half as long as the petals. Anthers relatively large, oblong-ovate, 2-lobed.

This description indicates the appearance which the remains present in this particular specimen, and it may or may not correctly describe the flower as it was originally. Where the parts are crushed together the order of superposition cannot be determined, so that the definition of the parts and their relative positions as indicated in the figures may represent merely present appearances and not the original conditions.

Apparently it was a 4-merous flower with 8 stamens, and there is an indication of what may be a portion of a style, or perhaps a broken filament, extruding from between two of the anthers.



FIG. 2. *Phentanthera petalifera*, enlarged about $7\frac{1}{2}$ diameters.

The peculiar spatulate appendages which are questionably regarded as attached to the divisions of the calyx-tube, may perhaps represent the tips of these divisions and not separate organs, or they may be expanded filaments. There is one almost perfect petal, shown on the right hand side of the figures, while on the

left there is another, evidently imperfect and apparently partly superimposed upon the remains of a third one belonging to the opposite (under) side of the specimen. If a fourth one was present it is not now apparent.

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AN ABNORMAL LEAF IN RUMEX

BY S. B. PARISH.



FIG. 3. Abnormal leaf of *Rumex hymenosepalus*, about $\frac{1}{3}$ natural size.

The accompanying figure represents an abnormal leaf of *Rumex hymenosepalus*, having two blades. The superior blade stands more vertically erect than the lower, it is shorter and more crisped, but in other respects the two are alike. Along the midrib the bases of the blades are separated by an interval of about three millimeters. Two adjacent plants were seen, each having fully half of its leaves affected in this manner, but not all to so great an extent as the one figured. On some the secondary blade was present but as a fragment, of greater or less size, or two or three separated fragments. These might occur at any point along the midrib, from its base nearly to its apex, but always of the form and size which the blade would there have presented, had it been continuous. And in every case, even when most fragmentary, the secondary blades were produced on both sides of the midrib.

It is possible to regard this teratological condition as an instance of foliar peloria. But to this view there are two objections.